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Journal of the Society of Arts.

FRIDAY, FEBRUARY 1, 1867.

Announcements by the Council.

ORDINARY MEETINGS.

Wednesday Evenings at Eight o'clock:—

FEBRUARY 6.—The following subject for discussion will be introduced by Mr. HENRY COLE, C.B.:—
“On the existing legal regulations in reference to the Cab Fares in the Metropolis, and their effect in rendering the Vehicles inferior to those provided in other European Capitals and the large Municipal Towns of this Country.” On this evening Sir Richard Mayne, K.C.B., Chief Commissioner of the Metropolitan Police, will preside.

FEBRUARY 13.—“On Artificial Illumination.” By D. N. DEFRIES, Esq.

FEBRUARY 20.—“On the Water Supply of London as it affects the Interests of the Consumers.” By THOMAS BEGGS, Esq.

CANTOR LECTURES.

A course of Six Lectures “On Pottery and Porcelain,” illustrated by specimens of various manufactures, and by photographs and diagrams, is now being delivered by William Chaffers, Esq.

LECTURE III.—MONDAY, FEBRUARY 4.

FAYENCE.—France, Spain, Portugal, Russia, Sweden, Denmark, &c.

GRES OR STONE WARE of Germany and Flanders.
Delft Ware, &c.

LECTURE IV.—MONDAY, FEBRUARY 11.

ORIENTAL PORCELAIN.—China, Japan.

LECTURE V.—MONDAY, FEBRUARY 18.

EUROPEAN PORCELAIN.—Italy, Germany, France, Holland, Belgium, Russia, Poland, &c.

LECTURE VI.—MONDAY, FEBRUARY 25.

ENGLISH POTTERY AND PORCELAIN.—Early History, continued to the beginning of the 19th century.

The lectures commence each evening at eight o'clock, and are open to members, each of whom has the privilege of introducing one friend to each lecture. Tickets for this purpose have been issued to each member.

ART-WORKMANSHIP AND EDUCATIONAL PRIZES.

The Court of the Worshipful Company of Goldsmiths have passed the following resolution:—

“That the sum of £25 be given to the Society for the Encouragement of Arts, Manufactures, and Commerce; £15 thereof to be applied by the said Society as a prize, or prizes, for the encouragement of workmen in the precious metals, and £10 to be applied as prizes of £5, £3, and £2 respectively, to be awarded, at the Society's Educational Examinations, to the three candidates who, being employed on works in the precious metals in any part of the United Kingdom, shall obtain from the examiners

the first, second, and next highest number of marks, such prizes to be distinguished in each case as “The Goldsmiths' Company's Prizes.”

It will be remembered that donations for similar objects have been received in this and in former years from the Worshipful Companies of Salters, Plasterers, Coach and Coach Harness-makers, and Clothworkers; and the Council are gratified by this further proof of the desire of these important Guilds to co-operate with the Society in its efforts to encourage Art-Workmanship and general Education.

The above Educational Prizes are offered to candidates at the Society's Examinations, to be held in April next (see below); the Art-Workmanship Prizes to competitors in the next Art-Workmanship Competition, particulars of which will be duly announced.

EXAMINATIONS, 1867.

In addition to the prizes announced in the Programme of Examinations, the following are offered:—

The Worshipful Company of Coach and Coach Harness Makers offer a prize of £3 in Freehand Drawing, and a prize of £2 in Practical Mechanics, to the candidates who, being employed in the coachmaking trade, obtain the highest number of marks, with a certificate, in those subjects respectively.

The Worshipful Company of Goldsmiths offer three prizes—of £5, £3, and £2 respectively—to the three candidates who, being employed on works in the precious metals in any part of the United Kingdom, shall obtain from the examiners the first, second, and next highest number of marks, such prizes to be distinguished as the “Goldsmiths' Company's Prizes.”

ART-WORKMANSHIP PRIZES.

The works sent in competition for these Prizes are now placed in the Society's Great Room for the inspection of members and their friends.

SUBSCRIPTIONS.

The Christmas subscriptions are due, and should be forwarded by cheque or Post-office order, crossed “Coutts and Co.,” and made payable to Mr. Samuel Thomas Davenport, Financial Officer.

RATISBON CATHEDRAL.

M. Schubarth, a corresponding member of the Society, has forwarded to the Secretary an interesting series of Photographs, illustrating the progress of the restoration of Ratisbon Cathedral.* He writes as follows:—

Ratisbon, Bavaria, 31st December, 1866.

SIR,—Feeling extremely thankful for the great kindness which the Society of Arts has shown me by sending

* See page 166.

me every week, since 1851, a copy of its *Journal*, I have always regretted not to have had it in my power to be serviceable to the Society. All that I have been able to do is to forward the *Journal* to some friends of mine, and to direct their attention to its very valuable and interesting contents, which were always appreciated by them. It has occurred to me that perhaps it would not be uninteresting to some members of the Society to receive some information concerning an important work, which, some years ago, was undertaken in this town of Ratisbon, namely, the restoration, or rather the completion, of the old cathedral. I take the liberty of forwarding to you, by a friend of mine, a parcel containing several photographs, representing the Ratisbon Cathedral in its former state, and the progress made from year to year in completing the building, especially the towers. I enclose some particulars of the cathedral, and a description, made by the present architect himself, of what has been done by him up to this time. For the convenience of those who are not familiar with the German language, in which this description is written, I have attempted to translate it into English, and I hope that the translation, though destitute of elegance, will at least be intelligible. I conclude, sir, by requesting you will have the kindness to present to the Society of Arts these objects, as a token of my gratitude for the favours shown to me.—I am, &c., B. F. SCHUBARTH, Councillor of Commerce, Commissioner for Bavaria at the Great Exhibition of 1851.

The Photographs referred to are now at the Society's house for the inspection of members.

Proceedings of the Society.

CANTOR LECTURES.

"ON POTTERY AND PORCELAIN." By W. CHAFFERS, Esq.

LECTURE II.—MONDAY, JANUARY 28.

The subject of Mr. Chaffers' second lecture was the maiolica work of Persia, Spain, and Italy, and it was amply illustrated by specimens of all the principal manufactures, kindly lent to the lecturer for the purpose by Mr. J. Henderson, Mr. F. Slade, Dr. Diamond, Mr. H. G. Bohn, and Mr. Durrant. The marks and monograms used by the various potters and ceramic artists of Italy in the 16th and 17th centuries were arranged on the walls. The lecture was opened by a short history of maiolica in general, and its leading characteristic, the stanniferous enamel glaze, was fully described. This distinguishing feature is a covering of a thick, opaque, white glaze, resulting from the introduction of the oxide of tin, which, from the dissemination of its particles, imbedded, uncombined, amid the glass, renders the substance opaque, and not only covers the dingy colour of the clay, but forms a fine colourless ground for the painter. All the manufactured pieces of pottery, after the first baking, were covered wholly or partially with this glaze, diluted, so that the water was absorbed by the biscuit, leaving the enamel in a state of powder on the surface; on this crude and gritty medium the painting was applied, and was necessarily produced by single strokes of the brush, no corrections being possible. It was then placed in the kiln again, to melt the glaze and fix the colours. The metallic lustre colours found especially upon the pieces painted at Gubbio were next described. Mr. Chaffers, in speaking of the Hispano-Moorish period, commencing from the 13th century, when the Alhambra was erected by the Moors, gave a history of the celebrated vase of the Alhambra, the finest specimen of Moorish fayence known, made probably at Malaga, early in the 14th century. Three vases full of treasure were discovered at Adarves, in Spain, by the Marquis de Mondejar, in the 16th century. With the gold found in them he laid out a garden on the spot

in which the vases were placed; but, being exposed to public view unprotected, they sustained considerable injury by being rubbed and handled, and eventually one got broken; henceforth every traveller who visited the garden took away a fragment as a memento, until all of it was gone. In 1785, two were yet preserved intact; but about the year 1820 a second disappeared altogether, and of three only one is extant. It measures 4 feet 7 inches in height. The colours of the decoration are a pure blue enamel, surrounded by a yellow lustre on white ground, ornamented with scrolls and Arabic inscriptions, with two antelopes in the centre. The pottery of Maiorca—from which place the term maiolica was derived—Valencia, Malaga, Manises, and other Spanish *fabriques*, came next under review. The richly-enamelled ware of Persia was then described, and reference was made to its early origin, from the fact of many plaques and discs being found, decorating churches in Italy which were built in the 12th and 13th centuries. Faenza, the best known and most celebrated for its productions, gave to France the name by which they have to the present day distinguished their enamelled pottery, as Maiorca in Spain did to Italy, and Delft in Holland to England. The favourite decoration in the 16th century was arabesques and grotesques in blue camaieu on yellow ground, or *vice versa*; the reverses of the plates having concentric circles, or spiral lines in blue, or zones of blue and yellow. Caffagiolo, established towards the end of the 15th century, produced maiolica of a very artistic character, and many valuable examples have been preserved to our time. The most ancient dated pieces are in the collection of Baron Gustave de Rothschild, 1507 and 1509; the latest date is 1590. A great peculiarity of this ware is the deep blue back ground on many of the specimens. Some well known plates of this *fabrique* are in the South Kensington Museum, as the Maiolica Painter in his Studio; a portrait of Pietro Perugino; a Procession of Leo X., composed of more than fifty figures; the St. George of Donatello, &c. To these succeeded Forli, Rimini, Viterbo, Ravenna, Travasio, Pisa, and other manufactories of secondary importance. Siena was an important *fabrique*, and many highly-finished enamelled tiles still remain *in situ* in the Church of San Francisco, and the Biblioteca, and the Petrucci palace supplied the South Kensington Museum with several hundred examples, some dated as early as 1509. The manufacture was continued during the 18th century. The Pesaro maiolica is generally known by a yellow lustre and blue ground, with imbricated borders, many having portraits of ladies and gentlemen, their names inscribed on scrolls—but there are many other varieties. Castel Durante was a very extensive manufactory; a large trade was carried on in drug vases. Being adjacent to Urbino, many of its productions are similar and often ascribed to that *fabrique*. In 1635 the name was changed to Urbania, in compliment to Pope Urban VIII. The Chevalier Piccol Passo, director of a bottega at Castel Durante about 1550, wrote a treatise on the art of making and decorating maiolica. This manuscript is preserved in the art library of the South Kensington Museum, and is a most interesting work, being illustrated with pen-and-ink sketches of all the details of manufacture, patterns of the ware, and the prices at which they could be obtained; the names of the principal forms of the vessels are given, and contemporary *fabriques* frequently alluded to. Urbino was the most celebrated of all the Italian manufactories, and many of the names of the artists are well known from their signatures on the pieces they decorated. The most noted is Francesco Xanto Avelli da Rovigo, who usually painted after the designs of Raffaele and other great masters, seldom, however, adhering strictly to the grouping of the originals. He also painted subjects from Virgil, Ovid, Ariosto, and other poets. On many of his pieces are found touches of the rich ruby and gold metallic lustres, which were evidently applied after the vessel had been painted and baked at Urbino; it was then sent to

Gubbio to be lusted, where the process was kept profoundly secret. Another celebrated ceramic artist of Urbino was Orazio Fontana, whose best works were referred to by the lecturer. The family of Patanazzi also, some of them painted maiolica at the early age of twelve. Gubbio is known to us especially by the works of Maestro Giorgio, who seems to have monopolised the rich ruby and yellow lustres. Mr. Chaffers exemplified the value which is attached to the rare productions of this artist, by quoting the high prices many of them have realised. A plate, painted with the Three Graces, was sold for 400 guineas, and many others were cited. The *fabriques* of Deruta, Ferrara, Turin, and Venice, in the 15th century, and those of a later period in the 16th and 17th centuries, as Savona, Genoa, and Castelli, were next described and their peculiarities pointed out.

In conclusion, Mr. Chaffers spoke of the Santa Casa at Loreto, where there are still preserved upwards of 350 maiolica vases, brought from the Spezieria, or Medical Dispensary, attached to the palace of Urbino. The last Duke of Urbino, Francesco Maria II., in his dotage had abdicated in favour of the Holy See, and at his death, in 1631, his heir Ferdinand de Medici removed the more ornamental pieces to Florence. The vessels from the Spezieria he presented to the shrine of our Lady of Loreto; these did not consist alone of drug vases, but among them were many choice pieces and some statuettes, which became the envy of more than one of the crowned heads of Europe. A curious piece of maiolica, inscribed with the words *Con polveri di Santa Casa*, Mr. Chaffers explained as having been made within the precincts of the sanctuary, with the dust shaken from the dress of the virgin and swept off the walls, mixed with clay and formed into cups or bowls, painted with the virgin and child and a view of the Santa Casa, and in this form preserved by the faithful as tokens of their visit to the shrine.

EIGHTH ORDINARY MEETING.

Wednesday, January 30th, 1867; Sir THOMAS PHILLIPS, Q.C., F.G.S., Chairman of the Council, in the chair.

The following candidates were proposed for election as members of the Society:—

Atkins, Francis Henry, 62, Fleet-street, E.C.
Barlow, James, Greenethorn, near Bolton.
Burgess, A. W., 107, Strand, W.C.
Chaffer, Thomas, 14, Great Howard-street, Liverpool.
Greenwood, Thomas, 28, Waterloo-road, Cheetham, Manchester.
Hayes, Henry, 31, College-green, Dublin.
Richardson, William, Hartford Works, Oldham.
Whitehead, Peter Ormerod, Rawtenstall.

The following candidates were balloted for, and duly elected members of the Society:—

Agnew, William, Manchester.
Angier, Samuel Haynes, 72, Cornhill, E.C.
Baragwanath, J. P., 163, Upper Thames-street, E.C.
Bingham, Reuben, 1, John-street, St. James's-sq., S.W.
Bonnor, George, F.R.G.S., 42, Queen's-gate-terrace, Kensington, W.
Bradfield, J. E., 2, Strand, W.C.
Chaffers, William, 19, Fitzroy-square, W.
Gard, Richard Sommers, Rougemont, Exeter.
Lobley, James Logan, F.G.S., 50, Lansdowne-road, Kensington-park, W.
Lubbock, Sir John, Bart., F.R.S., 15, Lombard-street, E.C., and High-elms, Farnborough, Kent.
Middleton, Thomas John, 79, Long-acre, W.C.
Muspratt, Edmund K., New-hall, 41, Old Hall-street, Liverpool.

Ommanney, Rear-Admiral Erasmus, F.R.G.S., F.R.A.S., 6, Talbot-square, Hyde-park, W., and United Service Club, Pall-mall, S.W.

Paine, Thomas, Banbury.

Pearce, J. D. M., A.M., Craufurd College, Maidenhead.

Ramsden, J. C., Busbridge-hall, Godalming.

Seaton, John Louis, 93 and 95, Hampstead-road, N.W.

Shaw, James Jesse, 2, Hill-road, St. John's-wood, N.W.

Somerton, The Viscount, Roche-court, Salisbury.

Thomson, John Reid, 18, Highbury-place, N.

Ward, John, 107, London-wall, E.C.

The Secretary then read the following—

REPORT OF THE JUDGES ON THE ART- WORKMANSHIP COMPETITION.

To the Chairman and Council of the Society of Arts.

January, 1867.

GENTLEMEN,—It is very gratifying to be enabled to recognise that the culture directed by your Society to the improvement of the Art-workman in so many departments of skilled industry, is at length bearing good fruit. Both in quantity and quality, the objects now exhibited in competition for your valuable prizes, surpass those contributed in any previous year. The most marked progress is shown in the class of hand-wrought metal work, more especially in iron. To two Art-workmen in this class—Mr. G. Page, of Clerkenwell, and Mr. W. Letheren, of Cheltenham—we have without hesitation awarded your prizes of £10 each; to the former for a reproduction of the celebrated Martelli bronze mirror case, in sheet iron, *repoussé*; and to the latter for an excellent panel for a screen, a specimen emulating the fine old smith's work of the fifteenth century. To the former we would also recommend should be given the special prize, known as "the North London Exhibition Prize," he having produced the object which we consider manifests in the highest class the most skilled workmanship in the whole display. In Mr. Page's case we reward not only excellence but novelty, since we have not heretofore observed any such indication of power on the part of an English Art-workman to compete with what has been hitherto almost exclusively produced in this most difficult branch of industry in France and Spain.

After dwelling upon the admirable work shown in the intractable metals, iron and brass, it would be unfair to pass in silence over two specimens of carving in wood, which possess remarkable merit, viz., the picture-frame, produced by various highly-skilled workmen, under Mr. J. H. Wyatt, of Dean-street, Soho, and the head of "Autumn," in satin-wood, by Mr. G. F. Bridge, of Westminster. The former is no less excellent as a specimen of gilding than of wood-carving; and the latter, though small, is still sufficient to display the rare dexterity of the artist.

There is one peculiarity of this Exhibition as compared with those of former years, viz., the liberty given to artisans to exhibit works after other designs than those prescribed in the classes enumerated in the first section of the programme. Many have availed themselves of this relaxation in the conditions, and highly creditable works have been sent in, of which Mr. Letheren's panel for a screen above alluded to, is the best. It is to be hoped that the promise held out by the merits of many of the objects shown this year in this section may mature in future years into an exhibition of powers of meritorious origination as well as of perfect workmanship. The Society is to be specially congratulated upon the institution of this section, and upon the results of its action in this respect.

While upon this subject, we would submit the propriety of changing the models given to the competitors, if not every year, at least more frequently than has been the practice heretofore. Any such frequent variation would stimulate the Art-workmen to fresh exertions,

would prevent the apparent monotony in the Exhibitions from season to season, and would certainly relieve the labours of the adjudicators, who are frequently apprehensive of rewarding in one year the very same object that had been eclipsed by higher competitors in a previous year.

Finally, we would willingly offer our congratulations on the successful character of the present exhibition, not only to the Society of Arts, but to the body of Art-workmen; whose contributions this year testify a rapid advance in effecting, what we trust may prove, a permanent alliance between beauty and propriety of design on the one hand, and admirable technical execution on the other.

(Signed) RICH. REDGRAVE, } Adjudicators.
M. DIGBY WYATT, }

The following is a list of the works, with the prizes awarded :—

FIRST DIVISION.

WORKS GENERALLY EXECUTED FROM PRESCRIBED DESIGNS.*

1. CARVING IN STONE.—Panel, after chimney piece by *Donatello*, by J. Daymond, Jun., 4, Edward-street, Vauxhall-bridge-road, S. Price £8.—(2nd Prize of £7 10s.)
2. Ditto, Gothic bracket, by E. J. Price £5.—(Prize of £4.)
3. Ditto, by John Edward Daly, 33, Medway-street, Westminster, S.W. Price £15.—(Prize of £3.)
4. Ditto, by John Barker, 4, John-street, Marlborough-road, Chelsea, S.W. Price £12.—(Prize of £6.)
- *5. Flowers carved in Caen stone, by W. H. Holmes, 101, Dean-street, Soho, W. Price £5.—(Prize of £5.)
- *6. CARVING IN MARBLE.—“*Ecce Homo*,” by J. P. F. Jones, 4, Surrey-villas, Nunhead-green, Peckham Rye, S.E. Copies made for £5.
- *7. Basso relievo, in marble, representing the Arts and Sciences, by the above. Price when finished £20.
- *8. Ditto, in marble, “*Triumph of Christ*,” by Owen Thomas, 66, Harwood-street, Camden-town, N.W. Price £25.—(Prize of £5.)
- *9. CARVING IN STONE.—“*Christ blessing little Children*,” by H. Francis, Reigate-heath, Surrey.
- *10. Ditto, “*First Steps in Life*,” by the above.
- *11. Ditto, specimens of letter-cutting in stone, by the above.
- *12. MODELLING IN PLASTER.—National emblems, arranged by J. Daymond, Jun., 4, Edward-street, Vauxhall-bridge-road, S. Price £8.
- *13. HEAD IN CAEN STONE.—“*Winter*,” by T. Herne, 22, Werrington-street, Oakley-square, N.W.
14. CARVING IN WOOD, after design by *Holbein*, by T. E. Mayle, 33, James-street, Stockwell, S.
- *14a. CARVING AND GILDING.—A Glass Frame, designed and carved by W. M. Holmes, principal part of the Flowers by Mouatt (deceased), gilt in double mat and burnished by Messrs. Buchholtz, Venning, Chowne, sen., Ettershank, Connor, and Allen; exhibited by J. H. Wyatt, 101, Dean-street, W. Price £230.—(Prize of £10.)
15. REPOUSSÉ WORK IN METAL.—Executed in iron, after the Martelli bronze mirror case at South Kensington, by G. Page, 39, Douglas-street, Northampton-road, Clerkenwell, E.C. Price £20.—(1st Prize of £10; also, North London Exhibition Prize.†)
16. Ditto, by J. S. Nichols, 4, Everilda-street, Hemingford-road, Islington, N. Price £5.
- 16a. Ditto, on silver cup, by X. Y. Z. Price £30.
17. Ditto, on silver, by V. U. (Unfinished.)
18. Ditto, “*Raphael's Three Graces*,” in silver, by Joseph Hakowski, 59, Frith-street, Soho-square, W. Price £20. Copies at £15.—(Prize of £2.)
- 18a. Ditto, “*Three Graces*,” in silver, by X. Y. Z. Price £12.
19. Ditto, “*Three Graces*,” in copper, silvered, by Charles Yerman, 14, Gerrard-street, Islington, N.
20. Ditto, “*Three Graces*,” in copper, by Alexander Dufour, 36, Cleveland-street, Fitzroy-square, W. Price £11.—(Prize of £4.)
21. Ditto, “*Three Graces*,” in copper, by W. Holliday, 14, Nailour-street, Islington, N. Price £15.
- *22. Ditto, Portrait of the late Viscount Palmerston, by the above. (Sold).—(Prize of £4.)
- *23. Ditto, Group, in copper, “*Abundance*,” after *J. Van Eycken*, by Thomas James Bowman, 3, Rheidolterrace, St. Peter's, Islington, N. Price £7 10s.
- *23a. Ditto, “*Raffle-leafage*.” Price £5.
24. HAMMERED WORK IN BRASS.—Adapted for use as a bracket, by W. Mansfield, 72, Bishop's-road, Camberwell New-road, S.
25. Ditto, by E. Millward, 35, Little Clarendon-street, Somers-town, N.W.
26. Ditto, by Albert Edward Millward, 13, New Compton-street, Soho, W.—(Prize of £6.)
27. HAMMERED WORK IN IRON.—Ditto, by Alfred Millward, 35, Little Clarendon-street, Somers-town, N.W.—(Prize of £3.)
28. Ditto, by G. H. Price £5 10s.—(Prize of £2.)
29. Ditto, by James Gwillim, 19, Sidney-square, Mile-end, E. Price £15.—(Prize of £2.)
- *30. Ditto, by the above. Price £20.
- 30a. Ditto, Panel for a screen, by W. Letheren, Lansdown Iron Works, Cheltenham. Price £20.—(Prize of £10.)
- *31. Ditto, by William Cunliffe, St. Peter's-street, Burnley. Price £5 5s.
- *32. Ditto, Bread-basket, designed by A. W. Blomfield, Esq., architect, for East Sheen Church; executed by T. Winstanley, 7, Stanhope-street, Claremarket, W.C. Price £12.—(Prize of £2.)
33. CARVING IN IVORY.—Medallion portrait of Flaxman, by J. W. Bentley, 22, Sherwood-street, Golden-square, W. Price £10.
34. CHASING IN BRONZE.—Bust of “*Clytie*,” by Frederick Beech, 52, Great Colmore-street, Birmingham. Price £16 16s.
35. Ditto, by H. R. Batchelor, Jun., 149, St. John-street-road, E.C. Price £14.—(Prize of £4.)
36. Ditto, by T. Nichols, 4, Everilda-street, Hemingford-road, Islington, N. Price £15.—(Prize of £6.)
37. Ditto, Ornament, after *Goutier*, by R. Reynolds, 15, Oak-village, Kentish-town, N.W. Price £15.—(Prize of £2.)
38. Ditto, Ornament, after *Goutier*, by G.—(Prize of £2.)
39. Ditto, Ornament, after *Goutier*, by H. J. Hatfield, 16, Alfred-street, Tottenham-court-road, W.C. Price £15.—(Prize of £4.)
- *40. Ditto, Group, “*Jacob Wrestling with the Angel*,” by the above.—(Prize of £3.)
- *41. Two miniature frames, raised and chased by the above.
- *42. Ditto, Statuette of “*Caractacus*,” by H. Hatfield, sen., 46, Bolsover-street, N.W. Produced for the Art Union of London.—(Prize of £5.)
43. ENGRAVING ON METAL, after arabesques, by G. S. B. Price £3 10s.—(Prize of £2.)
44. Ditto, by G. Berry, 31, Brewer-street, Golden-square, W. Price £4 4s.—(Prize of £5.)
45. Ditto, by William Rowe, 4, Larkhall-lane, Clapham, S. Price £3.

* Those marked with an asterisk (*) are not after the prescribed designs.

† This Prize consists of the interest of £167 7s. 3d. Consols, invested in the name of the Society of Arts, to be awarded by the Council “for the best specimen of skilled workmanship” at the Society's Exhibition.

- *46. Ditto, by Gilles McKenzie, Tudor-street, Sheffield.
 *47. Ditto, by the above.
 *48. Ditto, by the above.
 *49. Ditto, on silver cup, by the above.—(Price of £2.)
 *50. ENAMEL PAINTING ON COPPER.—“Madonna and Fish,” after *Raphael*, by Frederick Lowe, 13, Wilderness-row, E.C.
 *51. Ditto, “Boy and Doves,” after *Raphael*, by Walter J. W. Nunn, 10, Gardour-street, Bromhead-street, Commercial-road, E. Price £5.—(Price of £3.)
 52. PAINTING ON PORCELAIN.—“Two Children,” in *Raphael’s* cartoon of “Lystra,” painted on a vase, by Edwin Saunders, apprentice. Exhibited by Messrs. Battam and Son, Gough-square, E.C.
 53. Ditto, “Two Children,” painted on a vase, by W. J. W. Nunn. Exhibited by Messrs. Battam and Son, Gough-square, E.C.—(Price of £2.)
 54. Ditto, “Two Children,” by F. D. Bradley, West-parade, Mount-pleasant, Stoke-upon-Trent. Price £4 4s.
 55. Ditto, “Two Children,” by John Slater, Field-place, Stoke-upon-Trent. Price £3 3s.
 56. Ditto, “Two Children,” by William Slater, Field-place, Stoke-upon-Trent. Price £3 10s.
 57. Ditto, “Two Children,” by William H. Slater, Oak-hill-cottages, Stoke-upon-Trent. Price £5 10s.—(Price of £2.)
 58. Ditto, ornament, by F. D. Bradley, West-parade, Mount-pleasant, Stoke-upon-Trent. Price £5 5s.
 59. Ditto, Ornament, by Alexander Fisher, 5, Clyde-street, Stoke-upon-Trent.—(Price of £3.)
 *60. Ditto, Ornament, plateau in blue, after design by *Maestro Ludovico*, by the above.—(Price of £3.)
 *61. Ditto, Pair of door finger-plates, majolica style, by Miss L. Leila Hawkins. Price £5 5s.—(Price of £2.)
 *62 & 63. Ditto, Circular-plates, subjects from the “Signatura” ceiling, by W. P. Rhodes, School of Arts, Stoke-upon-Trent.—(Price of £2.)
 64. DECORATIVE PAINTING, Ornament, by John Slater, Field-place, Stoke-upon-Trent. Price £3 3s.—(Price of £4.)
 65. Ditto, by A.
 66. Ditto, by Charles Pfänder, 28, Bayham-street, Camden-town, N.W. Price £6 5s.—(Price of £2.)
 67. Ditto, after a picture frame in the South Kensington Museum, by the above, £13 10s.—(Price of £4.)
 68. WALL MOSAICS, after *Bertini* of Milan, by Samuel Cooper, 2, Waterford-terrace North, Walham-green, W.
 69. DIE SINKING, after *Wyon’s* “Head of Prince Consort,” by W. E. Bartelle, 4, Chichester-place, Wandsworth-road, S. Price £15.
 70. Ditto, by J. W. Minton, 9, Royal Mint, E.C. Price £20.
 71. Ditto, by Albert Heness, 3, Egbert-street, St. George’s-road, N.W. Price £10 10s.—(Price of £2.)
 72. GLASS-BLOWING.—Exhibited by Dr. Salviati, 431, Oxford-street, W. Produced by Marco Seguso, of Murano.—(Highly commended, but ineligible for a Prize, not having been produced in this country.)
 73. BOOKBINDING.—After an Italian specimen, “Quintus Curtius,” by John Jeffrey, 23, Upper Marylebone-street, W. Price £7.—(Highly commended, but ineligible for a Prize this year, the producer having taken the 1st Prize last year.)
 *74. Ditto, Early Florentine style, “Histoire de la Porcelaine,” by Louis Genthi, 30, Brydges-street, Covent-garden, W.C. Price £35.—(Price of £5.)
 *75. Ditto, “Œuvres de Lorize Labe,” by the above. Price £8 8s.
 *76. Ditto, case specimen of Mosaic, by the above, £10 10s.—(Price of £3.)

77. ILLUMINATIONS.—Specimen by Charles Pfänder, 28, Bayham-street, Camden-town, N.W. Price £5 10s.—(Price of £4.)
 78. Ditto, by Miss Mary R. David, 4, Anderson-street, Chelsea, S.W. Price £5 6s.

SECOND DIVISION.

WORKS EXECUTED WITHOUT PRESCRIBED DESIGNS.

WOOD CARVING.—(a.) *Human figure in the round, in alto or in bas relief. Animals or natural foliage may be used as accessories.*

79. “Egeria,” by J. W. Gould, 33, Bayham-place, Camden-town, N.W. Price £15.
 80. “Cynthia,” by the above. Price £10.
 81. “Autumn,” Female Head in satin wood, by G. F. Bridge, 3, Vincent-square, S.W. Price £5 10s.—(Price of £5.)
 82. A Finial carved in oak, by R. Davison, 28, Winchester-street, South Belgravia, S.W.
 83. Original Group in walnut, “Wallace at the Battle of Stirling,” by John Lucas, 82, Long-acre, W.C. Price £31 10s.
 83a. Panel, in Ebony, “Boy and Moth,” by R. Flipping, 67, Charrington-street, Oakley-square, N.W.—(Price of £2.)

(b.) *Animal or still-life. Fruit, flowers, or natural foliage may be used as accessories.*

84. “Dog’s Head,” by E. Dujardin, 46, Camberwell-grove, S. Price £2.
 85. Panel. “Bird and Flowers,” by the above. Price £10.—(Price of £2.)

(c.) *Natural foliage, fruit, or flowers, or conventional ornament, in which grotesque figures or animals may form accessories, preference being given where the work is of an applied character for ordinary decorative purposes, as representing commercial value.*

86. Panel in Lime Wood, by J. S. Booth, 19, Malden-road, Kentish-town, N.W. Price £10 10s.—(Price of £4.)
 87. Chimaera Truss Leg, by R. Baker, Messrs. Holland and Sons, Gillingham-street, Pimlico, S.W.
 88. Vase of Flowers and Conventional Bracket, by G. H. Bull, 16, Millman-mews, Millman-street, W.C. Price £23.
 88a. Panel of Flowers, exhibited by Messrs. Gillows and Co., carved by R. A. Brangan, 54, Foley-street, W.—(Price of £3.)

- 89 & 90. Design for Damask Table Linen, by Miss A. Kemp, 27, Hereford-square, Brompton, S.W. Price of No. 89, 15s.; No. 90, 10s.
 91. Design for a Book Cover, by Miss Mary R. David, Price £1 10s.
 92 & 93. Designs for Damask Table Linen, by the above. Price 10s. each.
 94 & 95. Works in Oil, by Charles Maiben, 40, West Hill-street, Brighton.

(The above are not eligible for Prizes.)

WORKS EXECUTED AND FINISHED BY MACHINE.

Exhibited by Charles J. Hill, 6, Albany-street, Regent’s-park, N.W. :—

- 96—98. Three Groups in Ivory. Price £15.
 99. “Head of H.M. the Queen,” in Ivory. Price £5.
 100. “Greek Head” in Steel. Price £8.
 101. Ditto, in Malachite. Price £5.
 102. Case with Two Proofs from Engravings on Steel for Surface Printing, and two “Medusa’s Heads.” Engravings and dies in hand. Price £4 each.

(The above are highly commended, but are ineligible for these Prizes.)

The SECRETARY read a letter from Mr. Digby Wyatt, expressing his great regret that he was prevented by illness from attending the meeting that evening. A letter from three workmen was then read, stating that the piece of *repoussé* work in iron (No. 15), produced by Mr. Page, to whom the first prize had been awarded, was "not embossed from the flat, but struck in a cast die obtained from the plaster cast issued by the Society." The Secretary said he had thought it right to make inquiry into the matter, and had been informed by Mr. Page that this was not the case.

Mr. J. S. NICHOLS suggested that the work might have been struck in a die and finished off afterwards, but that could not be regarded as *repoussé* work, which meant embossing from the flat.

The CHAIRMAN suggested that Mr. Page, who was present, should give any explanation he thought proper.

Mr. PAGE begged to state that the parties by whom the exception had been taken were under a false impression in supposing that the work had been struck from a die; but he had no objection to explain to his fellow-workmen the plan on which he proceeded. The manner in which the metal was "got up" was this:—In the first instance he soldered the plate upon a piece of block tin. Having explained what he considered the advantages of this plan, Mr. Page said that, as to the work having been struck in an iron die, those who entertained that idea could have little conception of the cost of producing such a die; and it must be further considered that to strike iron into such a die would be an extremely difficult task.

Mr. CAMPIN remarked that the prize having been offered for *repoussé* work, he considered that if the work sent in had been struck in a die it was not *repoussé* work, ordinarily so called, and he thought the question should be definitely settled.

The CHAIRMAN said it seemed to him to be a question of fact. The most proper and convenient course under the circumstances would be that the judges should hear the objections on the one side, and Mr. Page's explanation on the other, and decide whether, under the conditions of the competition, he was entitled to the prize or not.

Mr. PAGE expressed his perfect concurrence with this suggestion.

The CHAIRMAN said although the cheques for the prizes would not be delivered to the successful competitors that evening, he was sure those present would be gratified by having an opportunity of personally recognising such of them as were present; he would therefore invite those prizemen who were present to come forward.

This request having been complied with,

The CHAIRMAN said it was gratifying to find that the appeal made by the Society had received so satisfactory a response; because undoubtedly the competitors had shown that English workmen of the present day were not inferior to those of other countries, or inferior, at least in many respects, to the workmen of our own country in past times. It appeared to him that the competitors generally, and especially those who had been successful in obtaining prizes, had creditably maintained the high character of their own class by the works they had produced—works which, although in most cases they were merely reproductions of splendid examples of the taste and skill of former times, were, he might venture to say, scarcely inferior to them in excellence. It was certainly most gratifying to the Society of Arts, which had now for several years endeavoured to stimulate the art-workmen of England, to find that they had among them men whose taste, knowledge of colour and of form, and skill in execution, had enabled them to produce works which had called forth the approbation of such distinguished artists as the judges in this competition. He trusted that those who now, it might be for the first time, had thus distinguished themselves, would have frequent opportunities, on future occasions, of showing their fellow-countrymen that they were resolved,

as far as in them lay, that England should not be behind the rest of the world in works of industrial art. He begged to offer them his cordial congratulations, and he hoped to see them again in the same honourable position in future years. He trusted they would feel, at all events, that the Society warmly sympathised with them in the struggles they must necessarily make in endeavouring to maintain and improve the position they had acquired. He would now invite the art-workmen present to intimate to the meeting any views they might have formed as to the competition which the Society had instituted. The Council desired to know whether it seemed to them that any alteration in the arrangements would contribute more effectually to the objects in view in these competitions.

Mr. ASHE desired to make the following suggestions:—That in all cases the judges should have the original article placed before them at the time of awarding the prizes, as well as the copies sent in for competition; that the copy should be made in the same material as the original, or if the material is to differ from the original, that such change should be made in the following year or years—for instance, should the material be of iron, then the copy in the first year might be of iron, in the second of brass, &c.; that no specimens sent in shall be either painted, bronzed, or have any artificial coating, except transparent lacquer; that, where it is possible, the model selected be placed in the Society's rooms, or in some other accessible place; with regard to the photographs published for the use of competitors, that the background should be so arranged as not to in any way confuse the outline of the object.

Mr. HOLLIDAY suggested that in the case of bas-relief designs the works should be either on a larger or a smaller scale than the original, as this would ensure a proper process of modelling for the work exhibited.

Mr. NICHOLS remarked that the object would not be gained unless the condition was that the work should be on a *larger* scale than the design. With regard to the chasing in metal, he hoped care would be taken in future that the castings were sound, as this had not always been the case.

The CHAIRMAN said he would now call upon a member of the Council (Mr. Hawes), who was present on the last occasion, and was in a condition to compare this exhibition with the preceding ones, to address a few words to the meeting.

Mr. W. HAWES said the great object which the Society had in view in establishing this competition was to bring out the individuality of the English art-workman, and thus give him a greater incentive to improvement. In foreign countries a workman had opportunities of obtaining a personal reputation which enabled him to dispose of his services at a much more valuable rate than when his name and talents were only known within the limits of the shop where he worked, and his productions were only distinguished as those of the firm who employed him. The Society was therefore anxious, without wishing in any way to disturb the community of interest which ought to exist between masters and their workmen, if possible to stimulate the workman to strive after that excellence the attainment of which would be equally beneficial to himself and to his master. The difficulties were considerable in the first instance. They had first to find out the means of making the great body of workmen in the country acquainted with the intentions of the Society. They had then to overcome many prejudices; and besides this it happened that during the last three or four years almost every art-workman was so fully employed that but little time was left him to enter into such a competition. Indeed, on the last occasion the number of works sent in was less than in the previous year, and the number of prizes awarded was less. Considerable discussion took place as to the cause of this decrease, and the impression the Council received at the time was that the conditions required some relaxation. This was done, and

in the present instance they had not only given examples to be copied, but had allowed the men to send works produced from their own or other designs. The result was that they had on the present occasion a number of works made from designs other than those prescribed by the Council, and he thought it was in a great measure to that they owed the increase in the number of works sent in, which was nearly double that on the last occasion; the number of prizes awarded being also considerably greater. He could not but feel that a Society like this, established for the encouragement of arts and manufactures, was undertaking a duty which was specially incumbent upon it in endeavouring thus to benefit not only the working men themselves, but art-workmanship generally, in this country, and if they were doing that, there could be little doubt they were promoting the best interests of the country at large. The works before them certainly proved that the prizes offered had stimulated men to exertion in their spare time, and had resulted in the production of a number of very beautiful works, which had called forth the warm commendation of the two gentlemen who had acted as adjudicators—than whom none were more competent for the task. The Chairman, in addressing the prize holders, had stated his conviction that the workmen of this country would, if proper opportunities were afforded to them, ultimately produce works equal to those of any period of art history, if they had not already done so. He could not help hoping that in a few years this branch of the Society's operations would progress as much as its educational examinations had done, in which, from a beginning of about fifty candidates, they now had nearly 1,200. In like manner they might expect a similar increase in the number of competitors for their Art-workmanship prizes. He would say a word or two with reference to the objection which had been raised against the work sent in by Mr. Page. He had distinctly told them that his work was not struck in a die, and had explained to them how he had contrived to execute it. It had, however, been suggested by a preceding speaker that nothing ought to be admitted for competition but what was done in the old-fashioned way. *Repoussé* work, they knew, was produced in a particular way, and it was argued that no specimen ought to be entitled to a prize unless it was produced in the manner in which all *repoussé* work had hitherto been produced. He thought if they imposed a limitation of that kind they would be acting in direct opposition to everything they proposed to accomplish by these prizes. They not only wished to reward the workman who had the greatest mechanical and technical skill, but also to encourage the adaptation of any improved appliances which his ingenuity might suggest for producing the required results. They must all be struck with the fairness of Mr. Page's explanation, for, though some of the means employed might be new, the work was strictly *repoussé*, and a production of which he had every reason to be proud. It had been more than once suggested that these prizes ought not to be adjudged by one or two gentlemen selected by the Council, but that there should also be a jury composed of workmen and employers of labour. This, he thought, would certainly produce much delay, and would not work satisfactorily. They had had, on this occasion, two of the most highly educated men in this country—one much engaged personally amongst workmen, and well known as possessing special knowledge of such works; the other, Mr. Redgrave, a gentleman whose artistic taste was of world-wide renown, and he thought they had thus the greatest possible security that the prizes were properly awarded, and with the most perfect good faith to the Society and towards the workmen themselves. He trusted the exhibitors on future occasions would appear in still greater number, and that they would all feel that while the Society gave its gold and silver medals for discoveries in science and art, it was equally anxious to reward those whose labour,

though in a less exalted field, was equally meritorious, and equally worthy of recognition.

Mr. GEORGE GODWIN, F.R.S., as a member of the committee for the selection of the examples for reproduction was happy to be able to coincide in the opinions expressed as to the superiority of the collection of articles this year above those of previous years; still it must be remembered that not half the sum offered by the Society had been claimed; and it was to be hoped in future years there would be a more extensive response to the munificent offers made. With regard to the piece of *repoussé* work to which reference had been made, he would state that when the design was selected by the committee they were fully aware of the great difficulty of the task, and if that were a genuine piece of *repoussé* work he accorded the greatest praise to it. At the same time he claimed that it should be found to be true *repoussé*, for he could not go with Mr. Hawes in saying that the mode of production was comparatively unimportant. For instance, by means of the electrotype a *fac-simile* might be produced without that manual skill which was required in the production of *repoussé* work. He quite accepted Mr. Page's assertion that it was a genuine work, but he felt obliged to make this observation in reference to the remarks of Mr. Hawes. Touching the bronzes on the table, there was one figure exhibited of especial interest—that of Caractacus, produced for the Art-Union of London—because it reminded him that 25 years ago, when the Art-Union decided on producing a number of bronzes, and when Mr. Woodington made a reduced copy of Sir R. Westmacott's "Nymph and Child," there was scarcely a furnace in London in which such bronzes could be made, and so great was the difficulty of making the castings that the artist himself erected works to produce them. They went on year after year, and the late Prince Consort was so struck with the efforts that were then being made in this direction, that he paid for the cast of the production, in order that he might possess a copy of this work, the first specimen of the revived art of making bronzes in England. He might point to the bronze before him as being equal to anything that had ever been done; it was a work well entitled to the praise that had been bestowed upon it. The hammered iron work of Mr. Letheren was also exceedingly good. Touching the glass exhibited by Dr. Salvati, all would be glad to see the ancient mode of making glass in Venice revived. At the same time he would enter a protest against regarding every form, because it was copied from old Venetian glass, as beautiful. He confessed he thought the specimen before them was essentially bad in form. No doubt it presented great difficulties in the manufacture; but he thought Dr. Salvati could have exhibited many others of greater beauty. In reviving the art of making Venetian glass, it was important that the models should be well chosen. In conclusion he would express a hope that the art of drawing would form a part of every artisan's education to a greater extent than had been the case hitherto. He would like to see it form a part of the education of every artisan's child, from the conviction he entertained that the greatest advantages would result to them from it in afterlife.

The CHAIRMAN, in concluding the proceedings, expressed his belief that they had not been uninteresting or unprofitable to those who had engaged in them. With regard to the remarks of his friend Mr. Godwin, he might say that the specimen of Venetian glass before them was produced in accordance with the model selected by the committee, of which Mr. Godwin was a member, though he was probably not present when that selection was made. His object, however, in rising was to announce what he was sure it would be agreeable to the meeting to hear, viz., that another of the great City companies, namely, the Goldsmiths', had promised its co-operation in the efforts of the Society to encourage art-workmen, and had given a donation of £25, a portion of which was to be applied as prizes for workers in

the precious metals, and the rest in furtherance of the educational examinations. Many of these great guilds owed their distinction, in former times, to the extent to which they contributed to the extension and perfection of various manufactures; and he thought in no other mode could they better contribute towards the same object than by co-operating with the Society of Arts in stimulating and encouraging industrial art. He was happy to find that several of them had already done so. On previous occasions it had been announced that the Salters' and Clothworkers' Companies had agreed to contribute towards this object, and he was glad to find their example had been followed by the distinguished Company to which he had just alluded. He would express his gratification at the proceedings of this meeting, and at having had an opportunity of taking part on an occasion which seemed to him to herald a promise of great future advantage to the industrial arts of this country.

Proceedings of Institutions.

YORKSHIRE UNION OF MECHANICS' INSTITUTES.—Some years since the committee instituted an Itinerant Village Library for circulation among the inhabitants of the villages and small towns of the country. The plans adopted have been most successful, and many permanent libraries have resulted from the approved value of the itinerant collection. In the course of time the original library has been worn out, and the committee have resolved upon a thorough re-organisation. Sir Thomas Biddulph has informed Mr. Henry H. Sales that it is the intention of her Majesty to renew the gift of 250 volumes made in 1854, by his Royal Highness the Prince Consort. Mr. Titus Salt has generously offered a donation of £20. Other gentlemen have made liberal donations in books and money; and the trustees of Rebecca Hussey's charity have given a grant of books to the amount of £13. It is proposed to raise £250 in aid of the library.

SUPPLY OF FOOD FROM TEXAS.

By THOMAS AFFLECK, ESQ., OF WASHINGTON COUNTY, TEXAS.

Can Texas supply the food-wants of England? She can. Texas is a vast pastoral and wheat-producing country, within a few days' sail. She has innumerable flocks and herds, and valleys capable of being made to yield great and unfailing annual crops of rice. Texas is the most southern of the states of the late confederacy, lying far to the south, yet emphatically a white man's country, from the fact that by far the greater part of her surface is quite elevated, much of it consisting of high, rolling prairie, possessing a rich calcareous soil. Her timbered lands, except in the low alluvial river-bottoms, are elevated, open, and well-drained. As just remarked, the prairie soils are rich in lime; hence the grasses borne by them are sweet and nutritious; and hence again, the meats produced by these grasses are rich and nutritious, in this respect far excelling the meats produced by the coarse grasses of the great pampas, or parched plains of South America, or by the equally arid grazing lands of Australia, where even the coarse sedge-grasses, unnutritious at best, often and utterly fail, compelling the herds to browse upon anything that will support life.

Fat bullocks and sheep can be procured in Texas at all seasons of the year, and can be driven any distance without suffering to the animal or danger to the meat. Bullocks grow to a great size, carry much lean flesh, the fat being about the kidneys, loins, and brisket, not, as in England, intimately mixed with the lean, consequently they are not so good for roasts, steaks, &c., but better for preserving, and for yielding the *Extractum carnis*. The mutton of Texas is remarkably fine, unsurpassed by that of any other country. The supply of meat is great. Prices are at present low, but must advance somewhat with

an increased demand. The distance is that of a twenty or twenty-two days' voyage by steam, from Galveston direct, or about forty days by a good sailing vessel.

How, then, can England share in the abundance of Texas? The present ruined condition of the people of the south is well known. Texas suffered less than the others, inasmuch as that she possesses such vast herds of cattle, sheep, horses, and mules, is less inconvenienced by the destruction of her labour system, and was never invaded by the enemy; still her commercial resources are altogether insufficient to carry her immense and valuable productions to market. She has beef and mutton, game and poultry, oysters, fish and turtle, wool, hair and hides, in prodigious quantity, as also much cotton. She possesses well-nigh inexhaustible forests of lime, oak (*Quercus virens*), of cypress (*Taxodium distichum*), long-leaved or great southern pine (*Pinus palustris vel Australis*), together with many other valuable timbers. Of iron, copper, lead, gold, silver, and other minerals, and of coal, the store is great beyond computation. Nearly all of the rivers west of the Bragos afford water-power enough to work up all the raw materials produced. Her limits embrace some one hundred and seventy-five millions of acres! Much of this, perhaps, more than of any other equal surface of the globe, is of rich and productive land, well watered, and suited to the growth of all of those crops most valuable to man, by the labour of the white race, as cotton, sugar, rice, indigo, tobacco, hemp, madder, the oil-producing seeds, hops, wool, &c.

Rice can here be safely cultivated by the white man, because the lovely valleys of Western Texas, so easily susceptible of irrigation, will, with irrigation, produce it in abundance, and without any marked deleterious effect upon the health of the cultivator. Sugar is not only produced from the cane, but the beet thrives exceedingly in the prairie soils of Texas. She needs population as part of the return cargoes of the ships taking her products. Hence the desire for direct communication with Europe, now denied us by the hitherto indifference to, or overlooking of, her commerce on the part of European merchants. Let England import of our excess—of that first necessity, food, and especially meats—and send us of her surplus population.

In what shape and how shall these meats be exported? The climate, although a warm one during the greater part of the year—ranging from 60° to 90° from March until December, exclusive—is clear and dry, fine cooling breezes prevailing, and the nights always cool, so that meats can be handled almost the year round. Dr. Morgan's infiltration process can be successfully employed for salting, and will be; but the consumption of salted meats is limited, and the market easily glutted. When, however, the Morgan process comes to be used upon the healthy, sound, nutritious beef of Texas, and other anti-septics used with the salt, and when the causes which produce scurvy are more generally understood, salt beef will be more extensively used.

Meats have long been successfully cured by being cooked and hermetically soldered up in tin cans, as are also various rich soups, oysters, fish, &c. Although these articles, and others thus preserved, are extensively used on shipboard and abroad, the high prices at which they are retailed has prevented their coming into everyday use. But, suppose they could be offered at a less price than that of butchers' meat—already cooked, always at hand, and especially the rich soups thus preserved, and in many varieties—would they not be brought into common use? The wife of the labouring man is only too often but an indifferent cook—here is the article almost ready for her family, and in a palatable form. The wives of those classes who are better off would find a few dozen cans of preserved meats, soups, fish, oysters, &c., extremely convenient, from which to supply that variety to their families which is always desirable, and to meet those frequent emergencies with which the housewife has to contend.

The process of Messrs. Sloper and McCall has been pronounced an entire success. It is as yet held to be a secret, and may, or may not, prove an ultimate commercial success. There are other similar processes, which are well understood, but it is greatly to be doubted if any of them will prove the successful medium through which England's wants, in the way of fresh meats, will be supplied from distant countries.

Professor Redwood's patented method of cooking boneless pieces of meat in that pure, tasteless, and colourless substance, paraffine, is not only a good plan, but one based upon correct principles. Whilst the mere water is evaporated from the meat, the whole of its juices are retained, and the coating of paraffine excludes the air. It needs a thorough trial upon a large scale, and commercially.

The writer, with some friends, partook of a broiled beefsteak, the other day, taken from a can in which it had been placed, uncooked, in October, 1866, having been first soaked a short time in a solution known as the "British Meat Preserver," offered by a company under that title in Upper Thames-street. The steak was excellent, a little dryish, though still juicy. The only objection that could be found to it was a slight after-taste upon the tongue, which, however, an onion-dressing would have disguised.

There seems one plan by which meats imported to England, by any or all the processes of preserving in tin, those of Messrs. Sloper and McCall, Professor Redwood, or the Meat Preserver Company, may readily be brought into common use, and prove the boon to the people which wholesome, well-cooked food must ever prove; and this is by the establishment of numerous cheap eating-houses in the cities and towns of this populous island, at the various collieries, potteries, cotton and other factories, foundries, rolling mills, &c., wherever large bodies of hard-working men are employed. This has been done in Glasgow by a philanthropic gentleman there, Mr. Corbet, and with the most perfect success. There a tired and hungry man satisfies that hunger fully and comfortably upon wholesome, well-cooked food, for fourpence.

Reform seems to be the exciting topic here at present. Here is the first and safest measure of reform—feed the people. Joint-stock companies seem to have fallen into great disrepute here; nor is it greatly to be wondered at that they should, as they have been originated and conducted. But here is an object—a purpose—for which such companies might be safely formed; requiring no great amount of capital, yielding immediate and sure returns, and open, in their management, to every one who chooses to study their workings. Such companies could not only feed the labourer at home, but, by the employment of shipping in importing meats from abroad, afford transportation to other countries to a portion of the plethora of population here.

The masters and owners of large factories, rolling mills, &c., would have fewer strikes to complain of, if they showed a greater interest in the physical comfort of their employes, by aiding and encouraging the establishment of cheap eating-houses, co-operative stores, &c. The economy to the labouring man, and the effect upon the comfort and health of his family, would have a wonderful influence upon him in every way.

There is yet another plan by which meat, in the form of fresh joints, &c., fresh from the shambles, may be brought from Texas to England. As applied to ripe fruits, it has proven a complete success in America. It is, to form the hold of a sailing-ship into a series of comparatively air-tight and moisture-proof rooms, in which the temperature is kept at a low point by a layer of ice overhead; some cheap and powerful absorbent of moisture being spread on the floor, to take up that which the meats suspended in the room may throw off. Similar means may be employed to act upon the air in the rooms. Within these rooms, the best joints of meat, suspended in close contact, firmly attached to fixtures, and with

rush mats, perhaps, between the courses, to prevent chafing, could be carried from Texas to England in as fresh a state, it is believed, as if newly killed; only, perhaps, a little less juicy; and hence they would be less liable to damage from re-exposure to the air than if not thus dried. By opening room after room, as required for sale, there would be neither loss nor waste.

And here permit a digression. It is understood that a very perfect building for meat markets is now being erected in London. Would it not be wise to arrange overhead such refrigerators as those suggested, in which the surplus meat of each day might be preserved fresh and sweet until sold? As matters are now conducted in the meat markets, much of that costly food is carried off each day somewhere for consumption or use, in a very unfit condition to serve as wholesome food.

In all such arrangements it must be borne in mind—and experience in America has proved the fact—that air which has passed over or in contact with ice, although it thereby loses its moisture, imbibes gases which are exceedingly injurious to animal food with which it then comes in contact.

But, to return—Dr. Hassall's flour of meat is another form in which importations may be usefully and profitably made. Even at the present high prices of the fresh article, the flour of meat is prepared and sold, no doubt, with profit.

Good fat meats cost in Texas, beef, say 1½d., and mutton 2d. per lb. Reckoning all the expenses of killing, curing, transportation, risk, and occasional loss, cost of selling, &c., these meats could be supplied to the consumer at prices greatly below what he now pays.

There is already a large consumption of the *Extractum carnis Liebig*. If it could be sold at a price to allow of its economical use in the kitchen, there is scarcely a limit to the demand which would arise; and this could be done if it were made from the rich and nutritious flesh of the beeves fed on the *mesquit* grasses of Central and Western Texas.

There are difficulties in the way of any extensive importation of flesh-food from Texas. To be done profitably it must be on a somewhat extensive scale, even to begin with. Few individuals likely to go into a business of this kind have the means at command to engage in it on a sufficient scale. There are breeders of cattle in Texas who would gladly engage in it if their cattle could be made to serve as the basis. Money is with them a scarce commodity.

The owners of the money and the meat must combine. Joint-stock companies are, at this time, as I have before observed, rather unpopular in England; yet it might surely be possible to form a combination of a few business men here, with cattle-owners and others in Texas, to do this thing of so much importance to the people of this island, and to do it prudently and profitably.

RUSSIA AT THE PARIS EXHIBITION OF 1867.

The Russian section occupies about 1,000 metres, in the rectangle part of the park, situated between the Palace and the Avenue de Suffren. There will be seen there:—

1st. A large shed, 30 metres long by five wide, in the Russian style; on the ground-floor will be exhibited agricultural machines; on the first-floor will be found an inquiry office, lodgings for six moujiks, and a store-house for forage.

2nd. Opposite the office of the Russian Commissioners, a pavilion in wood, very much ornamented, in the style of the boyars of Northern Russia. The entire mechanism of construction is visible. The purlins of the roof rest upon the principal rafters of the gable, and are held above by pegs of wood. The stove, with its cooking place, is, as usual, of terra-cotta.

3rd. A large isbah, or peasants' dwelling, composed of three buildings, grouped together; it is built of red pine, forming a complete dwelling; the walls are com-

posed of round barked trees, trimmed with the hatchet. The underpart of each piece of wood is grooved, so as to receive the upper part of the lower piece. The joint is packed with oakum. The ground-floor is appropriated for stabling. The first-floor, divided into two chambers, comprises the dwelling for the peasant and his children. In one corner is placed an immense stove of terra-cotta, which serves both as an oven for bread and for heating purposes. The staircase is outside. Joined to this building is a covered court, serving specially as a place of shelter for the farm carriages. There is also a small habitation (without stables) of white pine, arranged as in the large dwelling; it is a sort of lodge, with portico in front. Neither nail nor peg is used in these different constructions. The isbah altogether represents the arrangements on a large estate in Russia. They are put up by M. Gromoff, one of the largest timber merchants in St. Petersburg.

4th. A vast building, of 76 metres by seven, intended for stables, in which will be seen twenty-four horses, of which ten are the types of different races of Russian horses, and fourteen are to be carriage or riding horses. The first-named horses are placed sideways, in longitudinal boxes. They can thus be readily untied from the wall, and can easily be thoroughly examined. At the two extremities will be lodgings for ten moujiks. This building is highly ornamented. The style is an application of the art of the Central Russian hospodars, as used at the present day. Carved wood is much used in the decoration.

5th. A yourta, or tent, of six metres in diameter. It is made of felt, in the form of a hive. Above, an open space leaves passage for the light and the external air, and for the smoke from below. It is the national dwelling of the Cossacks and wandering Tartars.

In the space devoted to Russia will also be found a sign-post and a milestone, indicating the distance from St. Petersburg to Paris.

RATISBON CATHEDRAL.

It appears by the description referred to in M. Schubarth's letter (p. 157) that, the first cathedral of Ratisbon having been destroyed by fire in 1273, the foundations of the present structure were laid in 1275, and the building was continued, with frequent interruptions, up to the year 1496. Some portions, however, still remained unfinished; the present altar was not erected till 1785, and from 1834 to 1839 King Ludovic I. of Bavaria effected much towards the improvement and restoration of the building.

In 1858 an association was formed at Ratisbon, under the patronage of the King and the Bishop, for restoring and completing the cathedral, especially the two principal towers, surmounted by spires, which are to be raised from 152 to 365 feet in height. The work was begun in 1859, but up to 1863 the funds at the disposal of the association were but small. In that year the King undertook to promote the undertaking by an annual grant of about £1,700 sterling, and from that time the works have proceeded much more rapidly, though the funds appear to be still insufficient. Since 1860 about £2,600 has been spent on the building, which, it is anticipated, will be completed in 1870. The progress of the works is illustrated by the photographs kindly forwarded by M. Schubarth.

Fine Arts.

NELSON COLUMN.—The lions some years ago entrusted to Sir Edwin Landseer have at length been completed, and are now in their place at the base of the column. The cost will be indicated by the following entry in the estimates for the Civil Services. Nelson Column, Trafalgar-square:—An estimate of the sum that will be required to defray the charges which will come in the course of payment in the year ending 31st March, 1867,

towards completing the stylobate, &c., of the Nelson Column: For four colossal couchant lions, to be executed and placed on the radial pedestals prepared to receive the same: total estimate for the service, £17,183 10s. 1d. Vote required for the year 1866-7, £6,000.

PHOTOGRAPHS OF PICTURES IN THE NATIONAL GALLERY.—The arrangements for this work, noticed last week, are approaching completeness. It will consist of three volumes, folio, after the style and size of the Turner Gallery. The issue will, in the first place, be in monthly parts, at a guinea each. The entire work will contain 360 photographs, representing 180 masters. The text is committed to the care of Mr. R. N. Wornum, the keeper of the gallery. The same author's Descriptive Catalogue, "Epochs of Painting," and "Life of Holbein," indicate the materials at command. It is understood that Mr. Wornum will adopt a historical classification, a treatment which will combine the characteristics and chronology of schools, with the incidents of individual biography. Messrs. Virtue are the publishers. The photographs have been taken, as already announced, by Messrs. Caldesi.

KENSINGTON MUSEUM.—An ingenious contrivance has been adopted for the exhibition of numerous drawings within a small area. The apparatus has the appearance of a wheel with radiating and moveable spokes hung round an axle. These spokes or wheels, which are in fact picture frames, contain the drawings or other works designed for display. The plan may with advantage be adopted in provincial museums and schools of art, especially where wall space is scanty. It is at once to be brought into requisition in the Paris Exhibition. One of these pictorial machines will demonstrate to the French some thirty stages of study in British schools of art; another will display various reproductions, such as photographs, electrotypes, and fictile ivories, made and disseminated by the Department of Science and Art.

NATIONAL GALLERY.—Among recent additions is a picture, "Christ and the Disciples going to Emmaus," by the rare Milanese master, Altobello Mellone. This painter, though almost forgotten, is praised by Vasari, and the picture now added to our National Gallery is expressly mentioned by Baldinucci. Altobello Mellone, who flourished at the beginning of the sixteenth century, was of the schools of Cremona and Milan. In the cathedral of Cremona he executed frescoes from the life of Christ, which Vasari says were "exceedingly beautiful, and truly worthy of commendation." This picture of the journey to Emmaus was formerly an altar-piece in the church of S. Bartolommeo de' Carmelitani at Cremona. It was purchased from the Conte Carlo Castellarco, Milan, by the late director, Sir Charles Eastlake, as far back as November, 1864. It remained some time in Milan for the purpose of reparation. It is said, however, to have been in fairly good condition. It is painted in oil, on panel; it measures 4 feet 10 inches by 5 feet 5 inches; it is not signed; the figures are life-size; the price was £320. The work is of special value in our National Gallery as a link in a historic series. It is a fair example of Lombard painting; it serves to show that at the time art in Tuscany and Rome was at its height, the chief cities of Northern Italy also became centres of separate schools, and were prolific in pictures by masters once famed though now forgotten.

Manufactures.

BIRMINGHAM MANUFACTURES.—Exhibitions of industry are now recognised as institutions of all countries; as such they are supported, and it may be questioned whether any locality has been benefited thereby to the same extent as Birmingham. The display of the works produced there, publicly exhibited on the stalls of exhibitions, showed to the world that these were not "lacquered shams;" and the result of each succeeding exhibition has been to demonstrate that

Birmingham industry is progressive, capable of improvement, and improving; that while producing the useful, she is equally successful in the production of the ornamental. The means by which her position has been vindicated, her progress rendered strikingly apparent, and the demand for the productions of her manufactures in brass increased, is owing to the publicity and to the instructive lessons afforded by Industrial Exhibitions.

Commerce.

FISHERY EXHIBITION AT THE HAGUE.—An Exhibition of Fishing Implements and Produce is to be held at the Hague, in the present year, by the Society for the Encouragement of Industry there. The importance of the Exhibition held in Amsterdam in 1861, and the beneficial results obtained by it, being now fully acknowledged, and Norway and France having followed the example thus set to them, the Society for the Encouragement of Industry, desirous of promoting the interests of this branch of commerce, and having observed with great interest the steps taken for the improvement of fishery during several years past, proposed to hold an exhibition of Fishing Implements and Produce at the Hague during the time of the ninetieth general meeting of the society, which will take place this year. The Hague, situated close to Scheveningen, an important fishing port and bathing-place on the North Sea-coast, has lately been greatly extended and embellished, and is moreover well known for its beautiful environs. Yet the most important reason for choosing it as the seat of an Exhibition of fishing implements and produce is, that the Hague is the principal town of the province of South Holland, which province is intersected by streams and currents, and contains the fishing-towns and ports of Scheveningen, Katwijk, Noordwijk, Pernis, Dordrecht, Middelharnis, Zwartewaal, Maassluis, and the ancient town of Vlaardingen, whose history has always been connected with fishery. Besides these advantages, the Exhibition will be supported by the authorities, grants having been made by the Provincial States and the Municipality of the Hague, so that all things tend to insure the success of the undertaking. The Exhibition will include every object connected with sea and fresh-water fishery. The articles will be divided into twelve classes, in the following order:—1. All sorts of fishing-smacks, boats, &c., used for fishing purposes, and drawings thereof. 2. Every object used for rigging and fitting out these smacks and boats. 3. Fisherman's clothes. 4. Implements used for fishing, viz., nets, ropes, hooks, harpoons, &c., and the raw materials for making these nets and ropes. 5. Various sorts of tan, serviceable to preserve and maintain the nets. 6. Bait for fishing (natural and artificial). 7. Implements used for the preparation, to salt, smoke, and dry fish, as well as salt used for the purpose. 8. Fish unprepared, prepared, and packed. 9. Packing materials, and all other objects used for the exportation of fish. 10. Objects of general use in connection with fish and other sea-animals, such as train-oil, whale-bone, and manure. 11. Models of basins, folds, hurdles, vases, boxes, &c., and the preparations used for the artificial culture of fish and crustaceous animals. 12. Books about fishery. At the close of the Exhibition, gold, silver, and bronze medals, as also honourable mention, will be awarded to such exhibitors as shall have distinguished themselves. Freight to and from the Exhibition, as also insurance of the articles exhibited, against fire and sea damage, will be paid by the Committee, on condition that the regulations made by them, and which can be had on application to the Secretary of the Committee, are strictly followed by the exhibitors. The exhibitors are requested to take the greatest care in packing, as, should damage or injury to the objects be caused by bad packing, the Committee will not be re-

sponsible. The objects to be exhibited must be in the hands of the Committee before the 15th of May. The exhibitors have the right to sell the articles exhibited, which, nevertheless, cannot be withdrawn before the close of the Exhibition. Any person wishing to exhibit, must give notice to the Secretary of the Exhibition, J. A. van Iterson, Esq., at the Ministry of Justice, the Hague, before the 15th March.

SUGAR MANUFACTURE IN RUSSIA.—Herr F. O. Licht, of Magdeburg, quoting from the *Neue Presse*, gives the following statistical statements about the beetroot sugar production in Russia for the season 1864-5:—"At the beginning of the season 1864-5 there were 336 sugar factories in Russia, 63 of which remained inactive during that season, leaving only 273 out of the 336 manufactories at work. The quantity of sugar produced amounted to 3,326,141 poods, or 53,455 tons (English measure) of raw sugar, that is to say, 6,864 tons more than in the previous season. The duty levied on the raw produce amounted to 615,303 roubles 70 copecks (nearly £93,000 English money), while the amount for the certificates of the manufactories amounted to £5,200. The number of labourers was 40,304 men, 16,723 women, and 4,645 children. According to the following statement, the production in Russia, for several years past, was:—

Years.	Manufactories.	Tons of Roots.	Tons of Raw Sugar.
1859-60 ..	424	833,988	26,519
1860-61 ..	398	708,233	21,246
1861-62 ..	353	573,418	17,202
1862-63 ..	299	542,073	11,990
1863-64 no returns	46,591
1864-65 ..	273	1,011,762	53,455

SUGAR IN FRANCE.—From the circular of M. Boulanger, and from the official returns of the *Moniteur*, we (*Produce Markets' Review*) extract the following statement as to the movements of sugar in France during the seasons 1865-6:—

	1866.	1865.
Factories at work	439	419
	Tons.	Tons.
Production so far of the season ..	155,383	182,546
Average monthly production ..	53,398	57,090
Average monthly consumption ..	15,401	22,663
Average monthly export	2,773	11,461
Stock in the factories	65,278	52,419
Stock in the Lille entrepôts	3,734	4,286
Stock in other entrepôts	36,920	29,509
Total stock	105,932	86,214

From the above it will be seen that, notwithstanding a decrease in the production of 27,000 tons, the stocks show an increase of 19,000 tons. This circumstance is explained by a reference to the exports, which give only 6,000 tons in 1866, against 33,000 tons in the same period of 1865. The sugar production during the last two seasons was thus distributed:—

	1864-5.	1865-6.
First four months ..	121,913 tons.	182,546 tons.
Last eight months ..	27,101 "	91,467 "
Total	149,014 "	274,013 "

Assuming the last eight months of the present season to be in the same proportion to the four previous months as in the season 1864-5, the remainder of the production would amount to 35,000 tons, and bring up the total to 190,000 tons. If we take the proportion which existed between the first four and last eight months of the season 1865-6, the remaining production would be as much as 78,000 tons, and the total production would be 233,000 tons. In all probability the production will be between these two extremes, and will reach about 210,000 tons. The manufacture was carried on in December with almost as great activity as in November; in fact, there were four factories which only commenced work in December.

Colonies.

PRICES OF FOOD IN VICTORIA.—The promise of abundance fills the farmers of this colony with fear lest prices should fall below the remunerative point. It is alleged that in Adelaide wheat of the new crop is being purchased at 3s. 6d. per bushel, delivered in January, and the farmers are alarmed at the prospect of the same prices ruling in Victoria. A conference has been held at Melbourne of delegates from several agricultural districts, to devise means to have a corn tax imposed, when, after much discussion of the comparative merits of a fixed and a sliding scale duty, they decided in favour of the latter, and resolved to take active measures to induce the Legislature to impose such a duty. It is generally understood that the farmers will not be content with any arrangement that permits the price of wheat to slide much below 7s. a bushel, or something like double what its true value is likely to be in future. Some want the Legislature to fix the price at 7s., some at 6s., and some are so moderate as to say they would be content with 5s.; but there is no likelihood that the colonial parliament will do anything whatever in the matter.

Obituary.

JEAN AUGUSTE DOMINIQUE INGRES.—The patriarch of French painters died at his house on the Quai Voltaire, Paris, on the 15th January, in the 87th year of his age. He was born at Montauban, on the 30th of August, 1780. His father was a sculptor in plaster, and young Ingres came to Paris in his seventeenth year, and in 1800 he won the second prize in painting, and two years later he won the grand prize, which made him nominally a pensioner of the French school in Rome, but the finances of the country were then in so low a condition that there were no funds for such purposes, and he remained in Paris, earning a scanty livelihood by his pencil. In 1806 he obtained the means of going to Italy, and from that time he was more Italian than French; in fact it is said that, with the exception of ten years, he lived constantly in Italy until he was about sixty years of age. His absence did not, however, prevent his contributing to the exhibitions of Paris; and the list of his works, though not long, is considerable. Amongst them the best known or most remarkable are, "Achilles Receiving the Messengers of Agamemnon," which won him the great prize, now in the school of the Beaux Arts, in Paris; Portraits of Napoleon as First Consul and Emperor; "Raphael and the Fornarina;" and many others, especially "the Apotheosis of Napoleon I.," a ceiling in the Hôtel de Ville of Paris; "La Source," shown at the International Exhibition in London in 1862; and many fine portraits. In 1834 the dispute ran so high between the admirers of Ingres and of his rivals, and especially those of Ary Scheffer and Delacroix, that he ceased from that time to send his works to the Paris Salon. At the Paris Exhibition of 1855, two special rooms were set apart for the works of Ingres and his great rival Delacroix, and each received a grand medal of honour. Ingres had received nearly all the honours which are bestowed upon artists; he was decorated in 1824, and in 1854 was made Grand Officer of the Legion of Honour, and in 1862 he was made a Senator. He had been a member of the Institute of France for thirty years. Ingres devoted himself wholly to the study and imitation of the Italian school. His drawing of the human figure was faultless, and his designs will take rank with those of the great Italians whose works inspired all his efforts. Originally, Ingres's father destined him for a musician, and he became an excellent violin player. His funeral was attended by a vast concourse, the Emperor being represented by Comte de Nieuwerkerke, chamberlain. After the funeral the Emperor sent an autograph letter of condolence to

Madame Ingres. Some of the most famous paintings of Ingres will be shown at the forthcoming Universal Exhibition, and their interest will be greatly enhanced by the death of the artist.

Publications Issued.

THE GEOGRAPHICAL DISTRIBUTION OF MAMMALS. By Andrew Murray, F.L.S. (*Day and Co., limited.*)—This work is of a high educational character. It consists of three parts, each of which in itself contains materials for a separate work. The first part, or introduction, treats of the principles through the action of which the present distribution of plants and animals has been produced; and, of course, among a multitude of other speculations, the origin of species occupies a prominent place. Mr. Murray's views upon it are decidedly the most important part of the book; and, if Darwinism be true, will help to remove a great stumbling-block from the way of its acceptance. The reader knows that a chief, probably the chief, practical objection to Mr. Darwin's theory of the change of species by a gradual long-continued principle, of variation being constantly in operation in all animals, is that no evidence of transitional forms has ever been found in past geological epochs, nor observed at the present time, but the contrary; whereas if the theory were true, a gradual transition should be observed by geologists in the fossil remains, from the oldest formation down to the newest, and in living species there should be universal confusion—nothing but a multitude of individuals in different stages of change and progression to something else. In fact, as put by Darwin, species would be impossible. As Mr. Murray says, "he has no brake by which to arrest the progress of variation when a species was completed." According to Mr. Murray's hypothesis, change in the animal only takes place when it is subjected to change of condition, the subtle effects of which, on a small scale, we all acknowledge by our periodical migrations to the sea side or country quarters for change of air. It is scarcely fair to state the hypothesis without also mentioning the concurrent views by which the author reconciles the difficulties, and anticipates the objections to his theory. These, however, would occupy too much space. It will be sufficient to say that the above is the key offered for the solution of the problem. According to it the normal state of organic beings is stability, not variation, as supposed by Darwin. So long as conditions are unaltered, or so slowly altered as to make the change imperceptible, species will remain the same; time, therefore, does not enter into the question except as multiplying the opportunities of change. But, whenever a change in condition does take place, a modification of species follows. Mr. Murray draws strong support from the facts of geology, showing how, when the temperature of the earth was greater, and, consequently, less variation in condition existed, the changes in form were few, and that, as the temperature decreased and conditions multiplied, so did species; and how, when the most important change of all—the glacial epoch, when for the first time the earth knew frost and snow—appeared, most changes of all took place, and, to all appearance, man among them. The second part of the work is devoted to the actual distribution of mammals—upwards of a hundred chromolith maps being given, showing the extent of the distribution of different families and genera; the past changes of sea and land; the former union or separation of continents as deduced from them and from the affinities of the mammals now found on them; and the past distribution, as gathered from the fossil remains of extinct allied forms—all are treated of at length. Paleontology forms a large portion of the subject of the volume; and although there are some parts, relating to the affinities and classification of species, which are rather dry reading to one who is not a naturalist or an anatomist, the whole is replete

with interesting speculations and attempts to solve puzzling questions relating to the past condition of our globe. From the data he has brought together, the author divides the world into four great regions, each sub-divided into one or two lesser provinces. The third part, or appendices, obviously contain the results of a great amount of study, but of course their value is that of a work of reference. The publication of a separate reprint of the first part and other general matter would be desirable, leaving the more technical information and details to be obtained by the naturalist and man of science from the more expensive quarto now published.

THE TEXTILE MANUFACTURES AND THE COSTUMES OF THE PEOPLE OF INDIA.* By J. Forbes Watson, M.A., M.D., Reporter on the Products of India to the Secretary of State for India in Council. (*Printed for the India Office.*)—This work, a copy of which has been presented to the library of the Society of Arts by the Secretary of State for India in Council, constitutes the key to twenty collections of Indian textile fabrics, each comprising seven hundred working specimens, which have been distributed in this country and in India for the purpose of illustrating this branch of commerce, and facilitating and promoting trade operations between the two countries. Of these extensive collections, each of which is contained in eighteen large folio volumes, seven have been sent to India, while a single copy has been deposited at each of the following places in Great Britain:—Belfast, Bradford, Dublin, Edinburgh, Glasgow, Halifax, Huddersfield, Liverpool, London (India Office), Macclesfield, Manchester, Preston, and Salford. It is intended, as stated by the author, that each of these sets should be rendered “easy of access to agents, merchants, and manufacturers,” and indeed to anyone bearing an order from (amongst others) the Secretary of the Society of Arts. The smaller work affords a detailed explanation of the objects that the author had in view in forming the collections referred to. “The interests of India require,” he says, “that nothing should be done to prevent her from receiving the benefits which may arise from competition between different sources of supply, or to interfere with the extension to other countries of the knowledge of the manufactures and products she is prepared to sell. It is admitted to be for the mutual advantage of India and of this kingdom that the most intimate commercial relations should exist between them. Nothing will conduce to this more certainly than a full and correct knowledge of what India can produce and what her people want. The means of acquiring this knowledge these volumes furnish, so far at least as textile manufactures are concerned. The twenty sets may be regarded as twenty industrial or trade museums, placed here and there in the two countries, and it is but a reasonable expectation that they will be extensively studied and consulted by the manufacturers of both. The result of this will assuredly be an increased interchange of commodities. The British manufacturer will learn what goods are likely to prove saleable in India, and what he can produce more cheaply than the native can; while the British merchant may find among some of the delicate fabrics of India, or of those which are elaborately decorated, articles which it will be profitable to import, because they can be made more cheaply in the East. In addition to this, in consequence of each set being as much as possible an exact counterpart of all the others, these museums will facilitate trade operations in the way already described, and will enable merchants to give, and manufacturers to execute, orders more readily and more accurately than they otherwise could.” This work, and the collections it explains, will certainly teach many valuable lessons

to manufacturers in this country, so as to enable them to adapt their productions to Eastern tastes and wants. It is important that they should know that a large proportion of the clothing of the people of India consists of articles which are untouched by needle or scissors, and which, in fact, leave the loom in a state ready to be worn, such as shawls and scarfs. The importance of only using fast colours is strongly urged, as the clothing of the Hindoo is frequently washed, and a failure of the colour naturally destroys the value of the fabric. Other points are, that the clothing of the people of India “is chiefly made of cotton; that there are certain colours, or tones of colour, which are favourites; that gold is largely used in the ornamentation of all sorts of fabrics; and that in the decoration of every garment regard is always had to the special purpose which that garment is intended to fulfil.” It appears hardly to be expected that the British manufacturer will ever be able to supply the higher classes of the natives, as he is scarcely likely to be in a position to compete with the native manufacturer in the more beautiful and expensive classes of fabrics, but he may hope for a large and lucrative trade with the lower classes. This work, and the collections it describes, seem likely to be of the greatest value in promoting our trade with India; and any member of the Society of Arts desiring to inspect any of the collections (one of which, it will be observed, is deposited at the India office) can do so, as above-mentioned, on applying for an order to the Secretary of the Society.

Notes.

NEW COURTS OF JUSTICE.—The exhibition of the competitive designs, in New-square, Lincoln's-inn, opens this day (Friday). That and the following day are reserved for private view. The drawings will be open to inspection for a month. The exhibition of designs for the new National Gallery closed on Saturday last.

THE COLONIES AT THE PARIS EXHIBITION.—The colony of Tasmania, to which 650 feet of space was allotted at Paris, by the last advices declines to exhibit, although it made a very admirable display at the International Exhibition just held at Melbourne. The Cape mail lately arrived announces that the House of Assembly there had voted £1,000 to defray the expense of that colony at the Paris Exhibition. Thirty feet has been allotted by the British Executive for a display illustrating the arts, manufactures, and commerce of west and central Africa.

FRUIT AND VEGETABLES IN INDIA.—Lofty and spacious market-sheds, for the sale of meat, vegetables, and the various other articles *de consommation* to be found in an Indian bazaar, have recently been introduced into Bombay. These erections were to be opened about the middle of January, by the holding therein of a horticultural exhibition. Upwards of £300 has already been subscribed for prizes, and the committee have thus been able to offer both valuable and numerous prizes to the successful competitors. The whole list of fruit, flowers, and vegetables, in regard to which competition is invited, comprises a total of some sixty varieties. In the glowing climate of India, florists must always have the advantage over horticulturists. While the finest flowers which at home are precious hot-house treasures, will almost look after themselves in India—always supposing there is plenty of water at hand—the products of the kitchen garden require much painstaking, in order to produce them remuneratively, of proper flavour and in constant succession. With regard to exotic fruits and vegetables, especially those which are of vital importance to the European residents, the backwardness and neglect of anything like market gardening on the scale that is required for Bombay appear to be very considerable. The committee of this market-show have, there-

* An edition of this work, with coloured plates, has been published by the Messrs. Allen, Waterloo-place, price £3 5s.

fore, done wisely in apportioning 27 prizes for vegetables, while 17 suffice for fruit and 15 for flowers. Special prizes have been offered for vegetables grown in soldiers' gardens.

LIFE-BUOYS.—A new life-buoy has been invented by M. P. G. Pignonblanc, the efficiency of which has been tested by very competent persons. It appears to be as ingenious as it is simple, and has the great merit of always being handy and applicable in nearly all cases of shipwreck. The life-buoys at present in use only sustain the person on the surface of the water, but do not guarantee him either from cold, hunger, thirst, or from sharks, that are met with in great numbers in hot climates; and once abandoned on the sea the man is unable to have any repose. On board even the largest ships there are but few life-buoys, and in case of shipwreck but few persons can take advantage of them, and in a heavy sea those unfortunate persons are soon knocked about and drowned by the waves. The life-buoy of M. Pignonblanc is simply an ordinary cask, the bung-hole of which is enlarged in order to admit a man, and round this hole a sleeve of canvas is nailed about 18 or 20 inches in length, and may be secured with a short piece of spun yarn. This sleeve is only closed when the breakers are very heavy, in order to prevent the water from entering into the cask. In order to prevent the cask from rolling, a weight or piece of iron is attached by means of two pieces of cord. The inventor states that he got into the cask at about 200 yards distance from the shore, on which the waves broke violently. The cask drifted slowly towards the breakers, the first of which caught the cask, which inclined slightly but was instantly lifted up again. The second and third drifted it towards the land, where the fourth breaker safely deposited it. The piece of iron then served as an anchor, and instead of being washed back to sea the cask remained on dry land. In this cask provisions may be taken and be kept dry, and the person may rest himself as in a hammock.

RUSSIAN RAILWAYS.—During the month of October, 1866, the railway from St. Petersburg to Moscow conveyed 136,235 passengers, 55,667lbs. of luggage, 4,323,563lbs. of goods; and its receipts were 1,200,406 roubles, which is 136,281 roubles more than in the corresponding month last year. From the 1st of January to the 1st of November, 1866, this railway conveyed 1,170,723 passengers, 538,285lbs. of luggage, and 41,178,815lbs. of goods. Its receipts were, during that time, 10,339,774 roubles, which makes an increase of 1,375,088 roubles over the corresponding period of 1865.

ENCOURAGEMENT TO SCIENCE.—M. Frémy, member of the Academy of Sciences of France, has put forth a proposition, which is not unlikely to be adopted by the Government. He says that the career of science is that which offers the least security. A young man devoting himself to scientific pursuits has difficulties of all kinds to contend against; and many real *savants* reach their fiftieth year before they can obtain even the modest employment of *préparateur*, while many of the greatest discoverers leave their families in absolute poverty; there is, therefore, a natural hesitation to enter on a purely scientific career, and science loses the services of many intellects of the first order. Another evil is that young scientific men, unable or unwilling to wait, enter into manufacture without that complete knowledge which would render them so much more valuable in the scientific trades. Professorships are necessarily limited in number, and occupy a considerable portion of time, which might be devoted to original investigation; besides, says M. Frémy—and although a truism it is often overlooked—it is not every learned man who has the qualities necessary for a good teacher of his art. M. Frémy's proposition is that there should be established sixty places, or titular professorships, in three classes, with salaries of two, four, and six thousand francs per annum respectively, and that these appointments should only be given to those who have done real service in the

cause of science; and he proposes the adoption of the plan of the Ecole Polytechnique, in which establishment the professors, assistants, and examiners have to submit to re-election every third year, in order that the places shall not become equivalent to retiring pensions. The total cost of such an arrangement as that proposed by M. Frémy would be £9,600 a-year. It is beyond question that of all classes of educated men those who follow pure science have the most difficult and most thorny path to tread; and now that industry is calling for all the science it can obtain to improve its productions, the value of original research becomes daily, not more important, but more evidently so. The principle advocated by M. Frémy has already been applied in the case of the Museum of Natural History of the Jardin des Plantes, where a laboratory was established last year by the Minister of Public Instruction, on the proposition of M. Chevreul and M. Frémy, where more than fifty young scientific men are enabled to pursue their studies, and carry on original investigations under unusually favourable circumstances, and without cost to themselves. The scheme of the great public laboratories of Prussia has naturally drawn the attention of the *savants* of France to the policy, and even the necessity, of taking all possible precautions to prevent their own country being outstripped. The proposal applies to France alone, but the principle to all countries. M. Frémy would have the Government supply the funds, and give to the Academy of which he is a member the power of nomination; but such a plan would not have general support in France, and in other countries it would be still less acceptable. But the value of the pursuit of original scientific investigation, in a commercial sense, is now so generally understood that, if ten thousand a-year would materially aid its professors, there ought to be little difficulty about the matter.

Correspondence.

IRON PERMANENT WAY.—SIR,—As I was not able to assist at the discussion of Mr. Rochussen's paper on "Iron Permanent Way," will you allow me space in your journal to contribute some of my own experiences? Mr. Rochussen appears to have stated that the difference between my wrought iron permanent way and that he advocated was, that I suspended my deep rail from two angle irons with the horizontal webs above, whereas on his plan the horizontal webs were placed below. This is not a distinction without a difference, but it is at variance with fact, inasmuch as I used the same arrangement of rail and angle irons both ways on two separate lines with the horizontal flanges both up and down. The apparent advantage of the flange down is the greater accessibility of the bolts confining the angle irons to the rails. But this is more apparent than real, inasmuch as I never found the bolts or nuts—bedded in the ballast, the angle irons being fitted in the rail channels with an elastic curvature, compressible in screwing up—I never found them to move. They keyed firmly into the ballast by their projections. The packing, being on the surface, was easily accessible without opening out. As regarded the result of the two systems of placing the angle irons, the horizontal bearing of the angle irons above, at the ballast level, was immeasurably superior. It was perfectly steady, and kept out rain completely from below the iron, though in some localities the two rising rail heads formed a pond between them. In laying down, the practice was to bolt the rails and angle irons together, with the horizontal flanges downwards, in lengths of a quarter of a mile, and then to turn them over and connect them together, and put on the tie bars. It was remarkable in this process to observe their facility of torsion, like a long snake, notwithstanding their rigidity both vertically and horizontally when laid *in situ*. This facility of torsion is an important element in ensuring a close fit on the ballast. Another important

fact was gleaned while laying down. The form of the rail was double headed, each head 2 inches wide by $1\frac{1}{2}$ inch deep, connected by a vertical web $\frac{1}{2}$ inch thick by $3\frac{1}{2}$ inch deep, making the total depth of the rail 7 inches, while the spread of the angle irons was 13 inches, the top of the rail head rising only $2\frac{1}{2}$ inches above the bearing surface on the ballast. Thus there was a keel $4\frac{1}{2}$ inches in depth below the bearing surface, which prevented all lateral movement. It was remarked that there would be great difficulty in "slewing" such a rail; but the answer was that if once laid straight it would never want slewing, *i.e.*, side moving, a process only resorted to when the lateral action of the flanges of the engine wheels forces the line to one side, a common thing with smooth surfaced transverse sleepers. The fact ascertained while laying was, how very small a bearing surface was actually needed to sustain the rails on the ballast, when laterally and vertically stiff enough to distribute the load over long lengths. On the main line where it was laid down, there were very short intervals between the trains, and the process had to be performed rapidly; the cross sleepers and rails of the old line were removed, and the hollow sleeper pits remained open. On this about $\frac{1}{4}$ mile of the wrought iron was laid down like a long ladder, the bearing surface being only the rail edges, 2 inches in width, equal only to 52 square inches per yard run, or 635 feet super per mile. The sinking of the rails on the surface with the fast train running over them was only $\frac{1}{4}$ -inch, and this did not increase with a considerable number of subsequent trains. The ultimate bearing surface when ballasted up was 11,440 feet super per mile, or 936 inches per yard run. The bearing surface of an ordinary cross sleeper rail, spaced 3 feet apart, is 12,320 feet super per mile, or 1,000 feet per yard run, but as only two-thirds of this surface is practically available, it is reduced to about 8,200 feet, or 720 inches per yard run. The inference to be drawn from this was that 10 inches in width continuous under each rail gave as much bearing surface as the cross sleeper rail, and inasmuch as it was a continuous bearing surface, eight inches would be found ample. As this iron way was laid down at the instance of Robert Stephenson and Joseph Locke, in a report to the directors of the London and North Western, it may be supposed that considerable thought had been given to it, and some practical experience. What, then, was the result? It was taken up one morning suddenly, after being in use six months; the exact reason I could never ascertain, but only that it was by order of the directors. Many reasons might be imagined. In the first place it is a nuisance to have a mile or two of experimental permanent way forming a portion of a main line, and requiring particular men to attend to it. Again, what is everybody's business is nobody's. Then there are many vested interests whose owners will continue to cry, "Great is Diana of the Ephesians." Again, the officers of the company are placed in a very invidious position. They get no credit by working the plan of a stranger if successful, and it is easy to throw the blame on them if unsuccessful. And sometimes there is at work the Scottish process known as "blowing in the big mon's lug," for "Robert is no ane o' our clan, an nae kith or kin." All these considerations act as a drag-shoe on too rapid progress, sometimes usefully and sometimes mischievously. The facts, during six months' usage, were, that it proved a much smoother road than the cross-sleeper road, and, on the whole, less noisy, though the noise was of a different kind. It was a continuous whirr, induced by the constant slip of the carriage wheels, with a rigid, minute vibration, like the scrape of a fiddle bow newly rosined, and the sensation was precisely the same on the three kinds of ballast that were used—one a loose-blowing sand; another, gravel much mixed with dirty clay; a third, large hard flint nodules, taken out of chalk, the ground being a wet clay bottom badly drained. Carriages commonly have more or less end play on their axles, and any

irregularity in the rails is thus avoided. With engines little or no end play is allowed, and, consequently, with a rail literally stiff and unyielding any irregularity becomes sensible on a jar. Now these rails, 13 inches wide on the bearing surface, were perfectly rigid, and, at the same time, they were imperfectly manufactured, and there were many "kinks," or irregular curvatures. When these occur in ordinary cross-sleeper rails, the evil is corrected by sliding and packing the sleepers endwise, and this kind of keeping the line in order is a common operation of the platelayers. In the case of the iron way, they endeavoured to correct the evil in the same way, but however carefully they might do it, the first passing train restored it to its normal position. The reason was, the ordinary way, being simply plastic, had no will of its own. It simply took the position into which either the engine or the platelayer thrust it. The iron way, on the contrary, was really permanent. As it was made so it remained, and was probably the first sample of permanent way in which this condition was attained. Had it been rightly made, it would have remained in good condition till the rails were worn out. There was another consideration. The number of bolts rendered it difficult to replace a nail in the same short time as on the ordinary plan. But on the whole the advantages were obvious enough to have warranted a continuance of the system with better manufacture. As regards the wear of the rails, I do not think that it was inferior to that of ordinary way; but they were of soft iron, and of course were liable to crush. But certainly the crushing of rails is more likely to take place with unequal bearings than with those which are continuous. With regard to the so-called rigidity, I believe the notion arose chiefly from the sharp ringing sound; and if the wings or angle bearings had been laid on strips of board this would have disappeared. Still there is no doubt on my mind that a certain amount of elasticity is essential to permanence and easy running, not merely vertically, but laterally also, and this whether steel rails or iron be used. I have found in practice that longitudinal timbers, trenched down on cross sleepers, and with the chairs spaced intermediately, with the sleepers thus resting on unpacked spaces, is the best arrangement with timber. The elasticity is thus continuous, and there is absolutely no blow; and laminated iron rails are no more liable to crush than homogeneous steel ones. But squares of cast iron or of slate, 5 inches thick and measuring about 6 feet superficial, in clay land, level with the surface, would be by far the best arrangement, and would, with great advantage and with ultimate economy, dispense with the cross sleepers of timber, and most probably with ballast also. On these the elastic longitudinals could be fixed. Mr. Juland Danvers asked why timber sleepers, used so commonly in England and on the Continent of Europe, will not answer in India. The reasons may be thus stated. First, there is the presence of the white ant, which seems to eat up every timber but teak, and that is too valuable, and it is cheaper to import creosoted fir sleepers from Europe. Secondly, heavy tropical rains saturate the timber, and then the hot sun shrinks and splits it. White ants do not like creosote; but again, a hot sun is not favourable to creosoted timber, unless it be wholly buried in the ground. For these reasons, engineers have taken to iron sleepers in the pot form, and these sleepers, Mr. Danvers states, are apt to crack. This could be remedied, of course, by heavier metal, but that involves much extra cost in material and freight, and more than that, in the handling. If iron way is to become the rule in India, it will gradually come to be wrought iron way, and past experience has not yet convinced me that wrought iron way must necessarily be more rigid than any other way, and especially cast iron way. I believe the question to be quite soluble whenever Mr. Danvers, in his capacity of multiple director of Indian railways, shall enter upon the synthesis with the same energy and acumen that he has given to the analysis, and satisfy the Indian Government

here that a very moderate expenditure will enable them to establish a permanent type at two-thirds the cost of the existing way. A curious phase has come round in timber sleepers in England. Time was that the sleepers decayed too fast by rotting, and so creosoting was introduced, adding 25 per cent. to the cost of the sleepers. Some companies still continue to creosote all their sleepers. Others have ceased to creosote the sleepers of the main line, because the destruction has become mechanical in too short a time for decomposition to act. With regard to the comparison made between steel and iron rails, the chief difference consists in the former being homogeneous, and the latter laminated in structure. I believe that iron rails made by the Bessemer process will prove ultimately to be more desirable than steel, for steel rails, unless perfectly annealed, or else hardened and tempered throughout, are not trustworthy. A steel rail, with hard and soft portions, is very liable to break; and I am by no means sure that a hard top and soft bottom will not ultimately resolve itself into stripping. The Bessemer process, giving us the power of producing iron in any required mass, and dispensing with puddling and welding, is an enormous national benefit.—I am, &c., W. BRIDGES ADAMS.

MEETINGS FOR THE ENSUING WEEK.

- MON.....London Inst., 7. Rev. C. Maurice Davies, "On Wit and Humour—Ancient, Medieval, and Modern."
Society of Engineers, 7½. Mr. Thos. Baldwin, "On Safety Valves."
Odontological, 7.
Farmers' Club, 5½. Discussion on the Abolition of Turn-pikes, and provision for Payment of Trust Debts.
R. United Service Inst., 8½. 1. Lieut.-Gen. W. N. Hutchinson, "A light, short Gun, throwing a sharp-edged, discoidally-formed Projectile." 2. Mr. Andrew A. W. Drew, "The Working of Heavy Broadside Guns."
Royal Inst., 2. General Monthly Meeting.
Entomological, 7.
Asiatic, 3.
Victoria Inst., 8. Rev. Walter Mitchell, "On Meteors and Falling Stars."
TUES ...Civil Engineers, 8. 1. Mr. John Bourne, Discussion on "Ships of War." 2. Mr. Wm. Henry Barlow, "Description of the Clifton Suspension Bridge."
Pathological, 8.
Ethnological, 8.
Anthropological, 8.
Geologists' Assoc., 8.
Royal Inst., 3. Prof. Tyndall, "On Vibratory Motion and Sound."
WED ...Society of Arts, 8. Discussion to be introduced by Mr. Henry Cole, C.B., "On the existing Legal Regulations in reference to the Cab Fares in the Metropolis, and their effect in rendering the Vehicles inferior to those provided in other European Capitals and the large Municipal Towns of this Country."
Geological, 8.
Pharmaceutical, 8.
R. Society of Literature, 4½.
Obstetrical, 8.
THUR ...Royal, 8½.
Antiquaries, 8½.
Linnean, 8. 1. Messrs. J. C. de Mello and Richard Spruce, "Notes on *Papayaceae*." 2. "On the Cultivation of the Nutmeg, &c., at Singapore."
Chemical, 8. 1. Dr. Matthiessen, "On Alloys." 2. Dr. Phipson, "On the Eggs of *Corixa mercenaria*."
R. Society Club, 6.
Artists and Amateurs, 8.
London Inst., 7. Prof. Wanklyn, "Chemistry of the Noble Metals."
Royal Inst., 3. Prof. Tyndall, "On Vibratory Motion and Sound."
FRIAstronomical, 3. Annual Meeting.
Royal Inst., 8. The Rev. F. W. Farrar, "On Public School Education."
SATR. Inst., 3. Mr. G. A. Macfarren, "On Harmony."

Patents.

From Commissioners of Patents' Journal, January 25th.

GRANTS OF PROVISIONAL PROTECTION.

- Animals, medication of food for—3433—J. Napier.
Artificial fuel—32—J. Bird.
Artillery and rifle practice—3323—J. W. Cusack.

- Augurs—46—W. E. Newton.
Bark from woods, removing—44—W. E. Newton.
Bathing chairs—78—M. H. Simpson.
Bench planing machines—3—A. D. Campbell.
Books, materials for binding—90—F. Brampton.
Brine, raising—48—C. F. Claus.
Cards, distributing—7—H. W. Hart.
Cartridges, &c., encasing—52—E. C. Prentice.
Cast steel—38—R. Mushet.
Cloth, finishing—86—W. E. Gedge.
Crank sheds—50—W. Martin.
Elastic gussets—3451—J. and J. Miller, jun.
Elastic springs—70—E. M. Chaffee.
Engines, regulators for—3416—S. Smith and J. W. Jackson.
Fibrous yarns—1—W. and J. W. Wood.
Fire-arms and their projectiles—56—W. J. Murphy.
Fire-arms, breech-loading—3383—J. R. Cooper.
Fire-arms, breech-loading—3447—G. P. Pocock.
Forms—72—S. P. Widnall.
Fuel, combustion of—3147—T. Petitjean.
Hats—3193—T. Bayley and J. Taylor.
Knitting machines—38—I. W. Lamb.
Liquids, evaporating and concentrating—5—M. Henry.
Materials designed to receive lead pencil marks, coating for—3392—S. F. Schoonmaker.
Metal, bending—3291—T. Berney.
Metallic zinc paint—82—J. Webster, E. Deane, and W. Rumble.
Muffs—3148—E. E. Quelle.
Ornamental painting, &c.—3330—T. Titterington.
Ovens and furnaces—80—J. Tomlinson.
Penholders—74—J. Darling.
Pottery kilns—60—H. Doulton.
Printing machines, feeding paper to—9—A. McGlashan and A. Brittlebank.
Punkahs, working—34—G. Logan.
Railings—84—J. H. Johnson.
Scarfs—13—A. Ward and C. G. Virgo.
Ships at sea, obtaining power from the motion of—11—C. D. Abel.
Sifters—3422—J. Slater.
Smoke, consuming—3001—E. Dawson.
Steel pens—3367—M. Weber.
Steering indicators—3402—N. C. Franzen.
Sugar—54—J. H. Johnson.
Tubular steam boilers—76—J. Howard and E. T. Bousfield.
Water delivery nozzles—36—E. K. Dutton.
Wearing apparel—66—A. Foucart.
Weighing machines—68—J. Silvester.

PATENTS SEALED.

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|-----------------------------------|--|
| 1947. J. P. Hubbard and C. Adams. | 1986. S. Chatwood, and J. and T. Sturgeon. |
| 1951. W. Seaton. | 2175. R. Tonge. |
| 1952. W. Stroudley. | 2658. F. Meyer, W. Wainwright, jun., and T. P. Pascoe. |
| 1955. C. D. Abel. | 2743. T. Wilson. |
| 1956. P. Griess and H. Caro. | 2759. G. T. Bousfield. |
| 1957. J. Phillips-Smith. | 2810. G. T. Bousfield. |
| 1960. W. Richards. | 2856. J. Chubb and W. H. Chalk. |
| 1970. J. J. Bodmer. | 3237. G. Haseltine. |
| 1983. G. H. Couch. | |

From Commissioners of Patents' Journal, January 29th.

PATENTS SEALED.

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|---|-----------------------------------|
| 1963. J. McKenzie, T. Clunes, and W. Holland. | 2024. J. H. Johnson. |
| 1968. J. A. Birkbeck. | 2052. W. R. Lake. |
| 1980. J. Sawyer and F. Bauman. | 2066. W. Clark. |
| 1982. J. Robinson. | 2104. W. Clark. |
| 1984. J. Parry and R. Morris. | 2131. S. R. Platt and E. Hartley. |
| 1988. C. N. Plantrou. | 2171. J. Johnson. |
| 1995. J. H. Johnson. | 2427. W. Clark. |
| 2003. N. Kilvert. | 2555. G. P. Dodge. |
| 2005. T. Campbell and H. Coffey. | 2735. A. V. Newton. |
| 2007. J. H. Johnson. | 2898. G. Haseltine. |
| 2008. W. H. K. Mack. | 3025. W. E. Newton. |
| 2010. P. Murray. | 3059. G. Haseltine. |
| | 3098. G. Haseltine. |

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

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| 159. H. Brockhurst & J. Sullivan. | 199. W. E. Newton. |
| 165. J. H. Johnson. | 237. J. Rodgers. |
| 182. T. C. Clarkson. | 218. G. Darlington. |
| 192. F. North. | 221. J. Combe & J. H. Smalpage. |
| 174. D. Anderson. | 224. P. Christie. |
| 187. J. Shaw. | 267. J. G. Jones. |
| 196. J. Platt and W. Richardson. | 476. G. Parry. |
| 200. E. Lucius. | 261. J. Whitworth. |
| 212. S. Valle. | 265. H. Bessemer. |

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

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| 166. J. Potter. | 226. J. Jeffreys. |
| 206. C. F. Varley. | 257. W. Hartley. |